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Examining progress and equity in information received by women using a modern method in 25 developing countries

Anrudh K. Jain¹

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Introduction

The 2012 London Summit on Family Planning promised to enable 120 million additional women with unmet need for modern contraception in the world's 69 poorest countries to use a modern method by the year 2020 [1]; women are considered to have an unmet need for modern contraception if they are sexually active and want to space or limit their childbearing, but are not currently using a modern contraceptive method. A global partnership—Family Planning 2020 (FP2020)—was formed to help countries achieve their national goal and to measure progress toward achieving the global goal.

Of the 120 million women estimated to have unmet need in 2012 whom FP2020 aims to help, 75 million had never used a modern method (never-users) and 45 million had used a modern method but discontinued use (past users) [2]. The large number of past users reflects high discontinuation rates among women using reversible methods [3, 4]. For example, an estimated 44% of pill users and 40% of injectable users discontinue use within 12 months [4]. The achievement of the “120 by 20” goal, therefore, requires not only helping never-users to initiate contraceptive use, but also reducing high contraceptive discontinuation among current users.

One way contraceptive discontinuation can be reduced is by expanding method choice [2]. This includes adding methods not currently available in a country and new methods that have fewer side effects than existing methods [2]. Adding methods can reduce contraceptive discontinuation by giving current users more methods to switch to

instead of stopping contraceptive use altogether; increasing the number of methods available in a country or a health facility is also likely to attract new users, and thus to increase contraceptive prevalence [2, 5-7]. Expanding method choice also includes shifting the method mix toward long-acting and permanent methods, which have higher continuation rates.

Contraceptive discontinuation can also be reduced by improving overall quality of care and information exchanged between service providers and clients. Information exchange is one of the six elements of the quality of care framework in family planning articulated more than 25 years ago [8]. Other quality of care elements such as choice of methods, interpersonal relations, and follow-up and continuity mechanisms are usually operationalized at the client level through information exchange.

A focus on improving quality of care and information exchange is important, both because women have a right to high-quality services and accurate information, and because high-quality care and information exchange contribute to other desirable reproductive health outcomes. For example, longitudinal studies in diverse settings have shown that high-quality care and better information received by contraceptive clients at initial contact (actual or perceived) are associated positively with subsequent contraceptive use and negatively with discontinuation and unwanted childbearing [9-12].

Adequate information exchange between service providers and clients is necessary to help women select a method appropriate for their reproductive

health needs and use it effectively to meet their reproductive goals. To these ends, providers need to elicit adequate information from clients about their reproductive health needs and family circumstances. In return, clients need to receive enough information about various methods to make an informed choice, as well as enough information about their selected method to know how to use it, when to come back for resupply, what to expect in terms of side effects and how to manage side effects if they occur. Clients also need to be informed that they can switch to another appropriate method if they would like to. The number of topics discussed at the time women initiate use of a method has been shown to be associated with better continuity of contraceptive use, which in turn is likely to reduce unmet need for contraception and unwanted childbearing [12].

FP2020 has identified 17 core indicators to track progress made by family planning programs [13]. Among these is the Method Information Index (MII), which is calculated from current contraceptive users' responses to three questions on information given them by their provider about their chosen contraceptive method [13]. These questions do not capture all the important aspects of information exchange mentioned earlier, but they do make it possible to routinely measure and monitor some important elements of the information women receive [14].

The data needed to calculate the MII are being collected through annual cross-sectional surveys under the Performance Monitoring and Accountability 2020 (PMA2020) project. The measurement annex of the 2015 FP2020 report includes MII values based on data for all women from a PMA2020 survey or Demographic and Health Survey (DHS) from 24 countries [15]. In addition, the annex includes MII values by type of contraceptive method used. It is too early to assess from these data how the MII will change over time or how it might vary across countries and among women with different characteristics within a country; however, some of these issues can be further explored now by using similar DHS data collected for several years and for multiple countries.

FP2020 is interested in understanding the degree of inequity in many of its core indicators. Social and economic inequities in health and family planning indicators have been well documented. For example, the DHS country reports for almost all countries show that contraceptive prevalence increases with such socioeconomic characteristics as household wealth, women's education and urban residence [16]. More recently, Ortayli and Malcher documented that similar inequities exist in multiple countries in another indicator—percentage of demand satisfied [17]. These inequities most likely reflect relatively low contraceptive use due to deficiencies in services available to the poorest segments of the population. It is important to understand the level of inequity in the information women receive once they reach a service facility and seek to initiate use of a contraceptive method.

The purpose of this study is to address the following issues: how the MII varies among countries, how it changes between two surveys in the same country, how it varies by type of method and women's characteristics, and whether any specific subgroups are responsible for observed changes in the MII between two surveys in a country.

Data and methods

Data were drawn from the 25 countries for which the two most recent DHS surveys—about five years apart—included the three questions needed to calculate the MII: “Were you informed about other methods?” “Were you informed about side effects?” and “Were you told what to do if you experienced side effects?” [15].¹² Fourteen of the countries had surveys about five years apart, and the other 11 had surveys 6–8 years apart; 16 countries were located in Sub-Saharan Africa, and the remaining nine were located in other regions. The analytic sample was limited to married women who reported current use of a modern contraceptive method (*i.e.*, sterilization, the pill, the IUD, the injectable and the implant) and had initiated the method within the previous five years.

The MII for a method is estimated by the proportion of current users of that method who responded “yes” to all three questions, in reference to what

¹² Women who were sterilized were also asked whether they had been told that sterilization is permanent; however, this question was not asked in all surveys and was not included in the FP2020 definition of the MII, so it was not included in this analysis.

they had been told at the time they began use of their method. The overall MII for all methods is the average of method-specific values, weighted by the proportion of users relying on a particular method. Method-specific and overall MII values can range from 0 to 100; a lower MII reflects a country's higher level of deficiency in regard to adequate information exchange between providers and clients. The proportion of women who responded no to all three questions was also calculated; however, results for this No Information Index are not presented because of its high correlation with the MII ($r = -.89$).

To study the issue of equity in information received, MII values were compared by women's characteristics, including type of modern method used, source of contraceptive supply (public or private facility), place of residence (rural or urban), household wealth (quintiles by DHS asset-based allocation), education (none, primary, secondary or higher than secondary) and age (five-year age-groups). In addition, the time since women started using their current method was estimated by subtracting the month and year of contraceptive initiation from the month and year of the interview; the measure was coded 0–1, 1–2, 2–3, 3–4 and 4–5 years.

Descriptive data are presented for two times for each country: at the first survey (time 1) and the second survey (time 2). In addition, data are presented for all countries combined, and separately for Sub-Saharan Africa countries and those located in other regions. Country-specific MII values were summarized by estimating the weighted mean or median (50th percentile) value, and the range by using the lowest value and the highest value of the MII for three groups of countries (Sub-Saharan African, other and all). The statistical significance of each country-specific change was tested by using a simple t test for the significance of the difference between two proportions. The statistical significance of differences between two median values was not tested; in general, a difference of less than five percentage points is unlikely to be significant.

Results

MII across countries and over time

The weighted average MII for all countries at time 1 was 34%, which indicates that for the earlier survey, only about one-third of contraceptive users reported receiving adequate contraceptive information from their provider (Table 1); the overall MII at time 2 was about five percentage points higher (39%). By region, the average MII values at time 1 and time 2 were 44% and 48%, respectively, for countries in Sub-Saharan Africa, and 29% and 34% for countries in other regions.

Individual country MII values at time 1 ranged from 19% in Pakistan to 64% in Tanzania; at time 2, the index ranged from 13% in Pakistan to 65% in Burkina Faso and Malawi. Between survey periods, the index increased in 15 countries and declined in 10; however, the change in 14 countries was less than five percentage points. Among the remaining 11 countries with a significant change in the MII of at least five points, seven experienced an increase and four experienced a decrease; the greatest increases occurred in Cambodia (20 points), Rwanda (16 points), Benin (14 points) and Egypt (11 points), and the greatest decreases occurred in Tanzania (12 points), Honduras (eight points), and Ghana and Pakistan (six points each).¹³

The correlation coefficient between the MII and the modern contraceptive prevalence rate (MCPR) was not statistically significant at either time 1 or time 2, which suggests that a country's MII does not depend on the level of modern contraceptive use. For example, MCPR rose between the two surveys from 14% to 27% in Ethiopia and from 27% to 45% in Rwanda (not shown); however, the MII increased over time only in Rwanda (from 42% to 58%—Table 1). The change in the index in a country also was not significantly correlated with change in MCPR.

¹³ Annual changes in the MII were also calculated for all countries to remove the effect of different durations between surveys. The basic conclusion remained the same: the MII per year changed very little in 14 countries, increased in seven (ranging from 1.4 points in Burkina Faso to 4.0 points in Cambodia) and decreased in four (ranging from 1.0 points in Pakistan to 2.2 points in Tanzania).

Table 1: Method Information Index scores and absolute change in countries' index scores among countries with required Demographic and Health Survey data, by time point

REGION/COUNTRY	TIME 1			TIME 2			ABSOLUTE CHANGE
	Survey year	N	Index score	Survey year	N	Index score	
ALL COUNTRIES	2001–2008	37,140	33.9	2006–2013	50,789	39.4	5.5*
SUB-SAHARAN AFRICA	2001–2008	11,783	44.2	2006–2013	20,567	47.7	3.5*
BENIN	2001	178	30.7	2006	504	45.0	14.3*
BURKINA FASO	2003	511	55.2	2010	1,617	64.6	9.4*
CAMEROON	2004	205	39.7	2011	356	39.8	0.1
ETHIOPIA	2005	1,155	19.9	2011	1,941	17.1	-2.8
GHANA	2003	403	47.8	2008	281	41.9	-5.9
MALAWI	2004	1,710	62.7	2010	4,613	64.6	1.9
MALI	2006	617	30.7	2012–2013	784	33.1	2.4
MOZAMBIQUE	2003	217	58.5	2011	479	53.6	-4.9
NAMIBIA	2006–2007	597	42.0	2013	498	40.8	-1.2
NIGER	2006	476	27.1	2012	941	28.5	1.4
NIGERIA	2008	1,024	49.3	2013	1,527	50.2	0.9
RWANDA	2005	317	41.5	2010–2011	1,929	57.7	16.2*
SENEGAL	2005	607	39.5	2011	931	41.4	1.9
TANZANIA	2004	860	63.6	2009–2010	1,107	51.5	-12.1*
UGANDA	2006	554	44.7	2011	600	43.9	-0.8
ZIMBABWE	2005–2006	2,352	39.4	2010–2011	2,459	35.9	-3.5*
OTHER REGIONS	2003–2008	25,357	29.1	2008–2013	30,222	33.8	4.7*
BOLIVIA	2003	1,406	52.5	2008	1,185	51.4	-1.1
CAMBODIA	2005–2006	1,772	44.0	2010–2011	2,938	63.9	19.9*
COLOMBIA	2005	2,186	31.4	2009–2010	2,384	39.6	8.2*
EGYPT	2003	3,154	26.8	2008	5,505	38.1	11.3*
HONDURAS	2005	1,473	35.9	2011	1,609	28.2	-7.7*
INDONESIA	2007	11,590	20.8	2012	12,140	20.9	0.1
NEPAL	2006	1,423	34.4	2011	1,567	42.2	7.8*
PAKISTAN	2006–2007	907	19.4	2012–2013	1,266	13.2	-6.2*
PHILIPPINES	2008	1,446	50.1	2013	1,628	52.5	2.4

*p < .05.

MII by method type and women's characteristics

- *Method type.* Median MII values show that the contraceptive information received by women varies by method type (Table 2). In all countries combined, the highest median MII was for implant users (64%) and the lowest was for women relying on sterilization (30%); MII values for women using other methods were 50% for the IUD, 45% for the injectable and 37% for the

pill. This pattern of MII by method type seen for all countries combined was generally the same for Sub-Saharan Africa and for other regions combined; however, in Sub-Saharan Africa, the median index value for the IUD was similar to that for the injectable (49% and 48%), and in other regions, the value for the injectable was similar to that for the pill (38% and 39%).

Table 2: Lowest, median and highest values of Method Information Index at time 2, by women's characteristics, according to region

CHARACTERISTIC	ALL			SUB-SAHARAN AFRICA			OTHER		
	Lowest	Median	Highest	Lowest	Median	Highest	Lowest	Median	Highest
ALL WOMEN	13.2	41.9	64.6	17.1	42.9	64.6	13.2	39.6	63.9
CURRENT METHOD									
PILL	10.0	37.2	68.6	20.0	35.9	68.6	10.0	39.0	60.1
IUD	18.4	49.5	80.5	19.1	49.4	74.5	18.4	55.3	80.5
INJECTABLE	14.7	44.5	68.8	14.7	48.0	68.8	18.6	38.4	63.2
STERILIZATION	7.7	30.3	69.2	16.8	31.0	69.2	7.7	26.9	68.2
IMPLANT	21.0	64.0	81.6	29.1	62.9	77.4	21.0	68.1	81.6
HOUSEHOLD WEALTH									
POOREST	7.2	37.0	72.6	10.2	37.9	72.6	7.2	28.0	66.5
POORER	12.9	39.8	63.2	12.9	42.3	63.2	13.3	32.2	59.2
MIDDLE	11.6	43.5	68.8	11.6	46.0	68.8	12.6	38.7	61.0
RICHER	15.7	39.8	65.9	15.7	38.9	65.8	17.1	43.3	65.9
RICHEST	15.7	49.0	68.5	24.9	49.4	64.2	15.7	49.0	68.5
WOMAN'S EDUCATION									
NONE	8.6	38.4	64.6	10.8	42.2	64.6	8.6	29.1	60.6
PRIMARY	12.6	41.5	65.0	18.9	43.6	65.0	12.6	34.8	63.4
SECONDARY	23.2	43.5	67.1	32.8	45.6	65.7	23.2	40.3	67.1
>SECONDARY	27.4	54.1	86.8	42.9	57.9	86.8	27.4	50.1	80.8
PLACE OF RESIDENCE									
RURAL	12.6	41.1	65.1	13.6	41.6	65.1	12.6	35.6	63.3
URBAN	14.7	43.6	67.2	25.2	46.1	65.7	14.7	42.2	67.2
SOURCE OF METHOD SUPPLY									
PUBLIC	14.4	47.3	74.6	16.5	51.5	66.9	14.4	36.5	74.6
PRIVATE	12.1	36.4	67.9	22.8	34.3	67.9	12.1	40.7	55.9
WOMAN'S AGE									
15-19	3.1	41.6	100.0	3.5	32.6	100.0	3.1	42.7	60.9
20-24	16.1	42.3	64.9	16.1	42.8	64.9	18.7	42.3	62.9
25-29	17.2	41.4	68.1	17.2	42.4	68.1	19.0	40.2	66.3
30-34	10.5	44.2	68.6	20.2	45.8	68.6	10.5	40.2	64.3
35-39	13.3	41.9	61.6	17.5	42.6	61.6	13.3	36.5	61.6
40-45	7.0	44.1	63.6	21.3	45.1	60.6	7.0	36.5	63.6
45-49	8.9	44.9	81.3	8.9	47.4	81.3	14.1	38.4	65.1
NO. OF YEARS SINCE CONTRACEPTIVE INITIATION									
0-1	13.0	42.7	65.2	15.9	42.4	65.2	13.0	43.2	62.7
1-2	11.4	45.9	67.7	22.4	48.1	67.7	11.4	37.3	67.1
2-3	15.4	38.9	65.6	16.6	42.0	65.6	15.4	36.6	58.6
3-4	12.2	44.4	75.1	12.4	46.4	75.1	12.2	38.3	66.6
4-5	12.4	44.6	69.4	12.4	54.6	64.3	14.3	39.2	69.4

Country-level differences in the MII by method type were also seen (not shown). The index value was highest for the implant in 14 countries, for the IUD in nine countries, and for sterilization and the pill in one country each. In brief, implant or IUD users in 23 out of 25 countries received the most information about their method as indicated by the MII.

- *Household wealth.* In general, the median MII increased with household wealth. Among all countries combined, the median MII ranged from 37% for the poorest quintile to 49% for the richest; however, the index value for the second-richest quintile (40%) was lower than that for the middle quintile (44%). This pattern was seen in Sub-Saharan Africa; however, the median MII for other regions increased consistently with household wealth, from 28% for the poorest quintile to 49% for the richest.

Patterns in the MII by household wealth differed in individual countries (not shown). Wealth differentials were practically nonexistent in Cambodia, Burkina Faso and Malawi, where the MII for each country was at least 60% across wealth quintiles. In Cameroon, Colombia, Egypt, Niger and Nigeria, however, the gap between women in the poorest quintile and those in the richest was at least 20 percentage points.

- *Women's education.* Overall, the median MII increased with women's education, from 38% among women with no education to 54% among those with more than a secondary education. This basic pattern was seen for Sub-Saharan Africa, as well as for other regions combined; however, in Sub-Saharan Africa, MII values for women with no education, primary education and secondary education were similar (42%, 44% and 46%, respectively) and substantially lower than that for women with more than a secondary education (58%); whereas in countries in other regions, the MII increased consistently and substantially, from 29% among women in the lowest education group to 50% among those in the highest.

Country-level MII differentials by education differed across countries (not shown). For most countries,

the difference in MII value between women in the lowest education group and women in the highest group was about 20 percentage points. However, the education differential was more than 37 points in Cameroon, Colombia, Ethiopia and Tanzania, whereas there was practically no education differential in Malawi, Mozambique or Rwanda.

- *Place of residence.* The median MII value for all countries combined was 41% for women living in rural areas and 44% for those living in urban areas. This pattern was seen for countries in the Sub-Saharan African region (42% and 46%, respectively) and for those in other regions combined (36% and 42%). However, for some individual countries (Bolivia, Malawi, Mozambique and Namibia), the MII was higher for rural women than for urban women (not shown).
- *Source of method supply.* For all countries combined, the MII was greater for women who reported public-sector facilities rather than private-sector facilities as their source for contraceptives (47% vs. 36%). This pattern held for the Sub-Saharan African region (52% vs. 34%), but was reversed for countries in other regions (37% vs. 41%). When individual countries were examined, MII was higher among women using private-sector facilities than among those using public-sector facilities in nine out of 25 countries (not shown); however, some women may have mistakenly considered social franchises and social marketing outlets to be public facilities.
- *Women's age.* For the overall sample, the median MII did not differ substantially by women's age; values ranged from 41% to 45% across age-groups. In Sub-Saharan Africa, the median MII value was 33% for women in the youngest age-group (15–19) and 42–47% in all other age-groups; for other regions combined, values ranged from 37% to 43%.
- *Time since contraceptive initiation.* The median MII for the total sample and for regions other than Sub-Saharan Africa did not vary substantially by the amount of time since women started using their contraceptive method; values for each differed by 6–7 percentage points. In the Sub-Saharan African

region, however, the median value among women who started using their method less than a year prior to interview was about 12 percentage points lower than the value among those who had initiated their method 4–5 years prior (42% vs. 55%).

Changes in the overall index over time

To explore whether country-specific changes in the MII were associated with changes in method-specific index values and women's characteristics, three countries with the largest change in the index—Cambodia, Rwanda and Tanzania—were examined. According to DHS data (not shown), the MCPR increased between time 1 and time 2 by about eight percentage points (from 27% to 35%) in Cambodia, by 18 points (from 27% to 45%) in Rwanda and by seven points (from 20% to 27%) in Tanzania.

The type of method women were using appears to be associated with changes in the MII (Table 3). In Cambodia, the index value increased between times for all methods but the implant; however, the value for implant users was already quite high at time 1 (69%). The rise in index value was particularly high among IUD and sterilization users (39% and 45%, respectively). In Rwanda, the MII increased for all methods but sterilization; the rise was highest among IUD and implant users (27% and 49%). In Tanzania, however, the index value decreased for all methods but the IUD; the decrease was particularly high among pill and sterilization users (18% each). These changes

may reflect changes in program emphasis on a particular method in these countries. Further analysis of method mix among current users included in this analysis indicated that in Cambodia, pill and injectable use declined between surveys, but IUD and sterilization use increased (not shown). Injectable and implant use increased in Rwanda, but the use of other three methods declined; the shift from pill to implant use was quite substantial (about 14 percentage points). In Tanzania, IUD and implant use increased, but the use of pill and injectable declined.

For almost all subgroups defined by characteristics other than contraceptive use, the MII increased over time in Cambodia and Rwanda, but decreased in Tanzania. The rise in MII value in Cambodia was greater than average among women in the lowest and highest wealth quintiles, and among those who had a higher than secondary education, lived in urban areas and received services from public-sector facilities. In Rwanda, the rise in the index was higher than average among women in the middle and second-poorest wealth quintiles and those with no education, those who lived in rural areas and who received services from private-sector facilities. In Tanzania, the MII declined among women in the three lower educational categories, particular those with no schooling, and increased only among women with higher than secondary education.

Table 3: Absolute change in Method Information Index, by women's characteristics, according to country

CHARACTERISTIC	CAMBODIA			RWANDA			TANZANIA		
	2005–2006	2010–2011	Absolute change	2005	2010–2011	Absolute change	2004	2009–2010	Absolute change
ALL WOMEN	44.0	63.9	19.9	41.5	57.7	16.2	63.6	51.5	–12.1
CURRENT METHOD									
PILL	43.3	60.1	16.8	46.2	55.7	9.5	65.9	48.1	–17.8
IUD	41.1	80.5	39.4	36.6	63.2	26.6	73.8	74.5	0.7
INJECTABLE	47.6	63.2	15.6	42.6	58.2	15.6	62.5	51.8	–10.7
STERILIZATION	22.9	68.2	45.3	17.8	16.8	–1.0	58.9	40.9	–18.0
IMPLANT	68.7	68.1	–0.6	11.4	60.8	49.4	65.3	64.0	–1.3
HOUSEHOLD WEALTH									
POOREST	37.6	66.5	28.9	38.6	55.6	17.0	56.6	45.9	–10.7
POORER	45.7	59.2	13.5	33.1	56.0	22.9	63.9	52.0	–11.9
MIDDLE	48.1	61.0	12.9	35.5	61.4	25.9	63.3	49.4	–13.9
RICHER	46.2	65.9	19.7	44.7	56.0	11.3	56.8	49.0	–7.8
RICHEST	41.8	68.5	26.7	46.7	58.7	12.0	70.1	57.7	–12.4
WOMAN'S EDUCATION									
NONE	40.6	60.6	20.0	27.6	53.3	25.7	69.1	50.0	–19.1
PRIMARY	44.0	63.4	19.4	44.7	58.2	13.5	62.2	50.3	–11.9
SECONDARY	48.1	67.1	19.0	42.5	60.7	18.2	67.6	61.6	–6.0
>SECONDARY	22.4	80.8	58.4	58.7	59.4	0.7	70.5	86.8	16.3
PLACE OF RESIDENCE									
RURAL	44.9	63.3	18.4	39.5	57.5	18.0	60.1	48.4	–11.7
URBAN	38.4	67.2	28.8	47.3	59.5	12.2	69.1	58.5	–10.6
SOURCE OF METHOD SUPPLY									
PUBLIC	53.4	74.6	21.2	43.4	57.6	14.2	63.2	50.0	–13.2
PRIVATE	43.4	52.3	8.9	40.0	57.3	17.3	54.4	67.9	13.5
WOMAN'S AGE									
15–19	48.5	60.9	12.4	na	71.7	na	51.4	53.6	2.2
20–24	45.6	61.6	16.0	45.5	51.5	6.0	60.6	48.2	–12.4
25–29	40.1	66.3	26.2	43.9	57.3	13.4	70.0	53.7	–16.3
30–34	46.8	64.3	17.5	38.3	58.6	20.3	63.6	47.3	–16.3
35–39	45.6	61.6	16.0	46.9	58.7	11.8	61.8	52.6	–9.2
40–45	43.9	63.6	19.7	44.0	60.6	16.6	60.0	58.1	–1.9
45–49	26.1	65.1	39.0	12.6	55.2	42.6	58.2	49.9	–8.3
NO. OF YEARS SINCE CONTRACEPTIVE INITIATION									
0–1	41.3	62.7	21.4	41.5	53.8	12.3	62.0	50.6	–11.4
1–2	41.9	67.1	25.2	41.2	57.7	16.5	71.1	49.6	–21.5
2–3	49.5	58.6	9.1	43.3	61.2	17.9	58.9	48.7	–10.2
3–4	48.5	66.6	18.1	37.4	63.9	26.5	66.8	62.8	–4.0
4–5	51.3	69.4	18.1	48.0	62.4	14.4	47.3	62.8	15.5

NOTE: NA=NOT APPLICABLE.

Discussion

The quality of care framework articulated more than 25 years ago has now become a standard part of the vocabulary in the family planning literature; however, little is known about the progress developing country family planning programs have made in improving the quality of services. This study—the first to examine issues of progress and equity in one indicator of information exchange, the MII—found that the value of the index varied considerably by region, by country and across survey times for individual countries.

At both time points, MII values for countries in Sub-Saharan Africa were higher than those for countries in other regions. Regional and country differences in index values could reflect changes over time in the way family planning programs have been organized. The 1994 International Conference on Population and Development (ICPD) marked a paradigm shift from a macro-level demographic perspective to individual-level improvements in reproductive health and quality, and also generated a shared commitment to reproductive health and quality of care. Most programs in Asia and Latin America were created prior to the ICPD, at a time when donors and programs were more focused on decreasing overall fertility and population growth rates. In contrast, many of the programs in Sub-Saharan Africa were organized after the ICPD, when donors and programs may have placed more emphasis on issues of quality in family planning programs.

In addition, program emphasis may also have reflected differences in women's desire to space or limit childbearing. Compared with programs in other regions, programs in Sub-Saharan Africa may have focused more on spacing births than on limiting births, which may have affected how services are delivered and the resulting method mix. Furthermore, the MII reflects the information women received at the beginning of their last episode of contraceptive use. In Sub-Saharan Africa, where contraceptive prevalence rates are increasing [16], these episodes may disproportionately represent first-time users, who may demand and receive more information than past users returning for services.

Changes in an individual country's MII over time reflect the effect of efforts made by that country's family planning program to improve information exchange between providers and clients. Although MII values in 15 of 25 countries increased between surveys, many of those countries experienced an improvement of less than five percentage points. And in the remaining 10 countries, the MII declined by as much as 12 points. These results clearly suggest that although the concept of quality is widely accepted, many countries have made limited progress in providing adequate information to women adopting a contraceptive method. Moreover, the findings show that there is substantial room for improvement in all developing countries.

MI values showed striking differences by contraceptive method. Implant users reported receiving the most information, followed by users of the IUD and injectable; women who relied on the pill or sterilization received the least. In 23 out of 25 countries, the MII was highest for either implant or IUD users, suggesting that these methods are being promoted by providers. Moreover, maximum changes in the MII observed in three countries (Cambodia, Rwanda, and Tanzania) appear to be related to changes in the method-specific information provided, which may reflect changes in the emphasis on a particular method in that country. If so, the introduction of a new method in a country might also be used to improve the content of information exchange for all methods; however, whether it is being done or can be done in practice is not known.

In most countries, the MII increased with education and household wealth. This finding may reflect better treatment by health facilities of women with higher social and economic status. Alternatively, it could suggest that, compared with other women, those of higher social and economic status may have greater method knowledge or that they may have a greater ability to recall the information they received.

Women need and deserve accurate and complete information about the method they select. It is quite challenging to determine the minimum level of information that women need from providers at

the time of contraceptive initiation; this has to be decided within the country context of a program or particular service.

Determining how to monitor the extent to which women can recall, in a population-based survey, the information that they received from providers is also challenging. DHS surveys and PMA2020 rapid surveys have made a good start by including three questions used in calculating the MII for users of a reversible contraceptive method, as well as four questions for users of sterilization. In future surveys, women using a reversible method could be asked an additional question about whether they were told about the possibility of switching. Information about the possibility of switching may facilitate continuity of contraceptive use. Moreover, this question is similar to the one about the permanency of sterilization those relying on sterilization are asked and would allow for the index to be based on four questions for all women.

For the MII based on three questions to be used widely, its validity needs to be established in terms of its relationship with other existing indicators, its value in predicting future contraceptive use and fertility, and the extent to which it can be used as a proxy for other key elements of information exchange. Findings from this study show that the MII and the MCPR are not correlated, which suggests that the two indicators reflect different aspects of family planning programs. Whereas the MCPR is the ratio of users and all married women of reproductive age, the MII is based on the information received by users only. A country focused on increasing its MCPR can do so with or without providing adequate information to users, as illustrated by comparing data from Ethiopia and Rwanda. Both of these Sub-Saharan African countries experienced a rise in contraceptive prevalence between the two surveys, but the MII increased over time only in Rwanda. This suggests that the program in Rwanda may have focused on increasing contraceptive use and providing information to clients, whereas the program in Ethiopia may have focused only on the former. The two objectives are complementary, however, because adequate information exchange may reduce contraceptive discontinuation, which in turn will likely increase contraceptive prevalence.

Another way to assess the validity of the MII is to assess the extent to which it is predictive of continuation rates. Such an analysis would require a longitudinal study in which individual contraceptive users are interviewed over time. This type of validity would require that a subsample of respondents from the DHS or PMA2020 be interviewed at a later date. Also, the data from a longitudinal study could be analyzed to study the effect on subsequent contraceptive behavior of clients' receiving the information asked about in the three MII questions.

In facility surveys, women have been asked multiple questions about their interactions with and information received from service providers; recall bias is not a concern with these data because respondents are asked the questions immediately after seeing their provider. For example, Costello *et al.* [18] collected data on 24 items describing the service-provision process and created five indicators of quality: all needs assessed, full method choice provided, full information received, treated well and connected well to services. However, it would be unrealistic to expect that surveys like the DHS or PMA2020 could include such questions and collect reliable information retrospectively. Further analysis of these types of data from facility surveys, such as the Service Provision Assessment surveys conducted by the DHS [19], could be helpful in deciding the extent to which the three or four questions currently included in the DHS and PMA2020 surveys could act as a proxy for other important questions about information exchanged between service providers and clients. Such an analysis would also help in ascertaining the minimum core questions that can be pretested and then included in DHS or PMA2020 surveys.

Limitations

In this study, the MII was estimated from retrospective individual-level DHS data. The routine availability of these data makes it possible to compare index values across countries and monitor changes over time; however, their use has some limitations, especially in regard to the accuracy and completeness of information exchanged between providers and clients. While facility surveys have used multiple questions to assess the content of information exchange [18], it is unrealistic to expect that population-based

surveys can collect reliable information retrospectively on multiple aspects of information exchange. The extent to which the three questions from which the MII is estimated might reflect the entire content of information exchange cannot be assessed from these data and requires further analysis. In addition, women's responses to the three questions may not accurately depict what they were actually told during their contraceptive visit. Instead, their responses may reflect what they may remember and what they may know from other sources. This tendency to recall and report information may increase with women's socioeconomic status, which may in part explain the observed increase in MII with women's education and household wealth. However, what information women perceive they were told or what they may have learned from other sources may be more important than what they were actually told in terms of their subsequent contraceptive behavior. Perhaps future fertility surveys can rephrase the three questions to enquire what women know and from whom (providers or other sources) they learned about each item included in the MII.

Courtesy and recall bias are also potential limitations. Courtesy bias arises when respondents give normative answers or answers they believe will please the interviewers. The values of the MII for most countries and for most subgroups of women within a country were well below the maximum possible score of 100, which suggests that these data did not suffer from substantial courtesy bias. The possibility of recall bias was examined by studying the relationship between MII values and the time elapsed since women started contraceptive use. Women who started use relatively recently should be able to recall the information they received better than those who started use some years ago; this type of relationship would also be expected if the content of information provided to women improved over the five years. However, MII values did not vary by time elapsed since starting contraceptive use, which suggests that the estimated index values are not affected by recall bias and do not reflect improvements in the content of information provided to women.

Another type of selectivity may be at work, however. Contraceptive users interviewed in a cross-sectional survey may not represent those who started contraceptive use a certain number of

years ago. Instead, they reflect women who started contraceptive use that many years ago and have continued use. Women in the original cohort who discontinued use are not included in an analysis of contraceptive users in a cross-sectional survey because they would be classified as nonusers. The degree of this selectivity would increase with time since contraceptive initiation, because of the increase in the cumulative discontinuation of a method with time since initiation. This would not be a problem if both groups—continuers and discontinuers—received the same information; however, empirical evidence suggests that the level of information received at contraceptive initiation is positively associated with subsequent continuation of a method [10-12]. Thus, those who receive less information are more likely to discontinue the method, which leaves behind those who received more information. Such selectivity would imply that using population-based survey data would overestimate the MII. We cannot check for this possibility because the DHS did not ask the three questions from discontinued users as well.

This selectivity could affect cross-country comparisons; the degree of selectivity depends on a country's method mix because different methods have different discontinuation rates. Cross-country comparisons may also be affected by a country's having different proportions of first-time users and past users. It is extremely important to document through further research the effect of this selectivity on MII values.

Finally, one indicator does not tell the whole story about the strengths and weaknesses of a country's family planning program. The MII simply indicates one facet of the program in terms of what may be going on in the area of information given to current users on a limited number of items.

Conclusions

FP2020 has taken an important step in the right direction by including the MII as a core indicator used to monitor an important aspect of information exchange. The results of this analysis show plenty of room to improve the content of information exchange, which could also result in quick wins in terms of better reproductive health outcomes among clients.

Monitoring changes in the MII is important, but it is not enough. The index is unlikely to rise rapidly in the absence of special efforts by family planning programs to improve the quality of care at service facilities, as well as in communities, among depot holders and at pharmacies offering resupply of methods. Concerted efforts are needed to improve the content of information exchange and quality of care. Experimental studies in Pakistan and the Philippines illustrate how this can be accomplished [18, 20]. These studies have demonstrated that it is feasible to develop and implement interventions to train service providers in interacting with their clients to improve quality of care, and that the nature of client-provider interactions can be improved through these training interventions. The Balanced Counselling Strategy has also been used to improve the content of information exchange between providers and clients [21].

There may be some tension between achieving a numerical goal—such as reaching a certain number of modern contraceptive users—and improving the quality of services [14]. A focus on achieving a numerical goal may adversely affect

the quality of care provided in some countries. One way to minimize the potential conflict between quantity and quality is to include activities and budget to improve the content of information exchange in the country plans being articulated under the auspices of FP2020. Both the numerical goal and quality of care can be incorporated by setting the overall goal as “120 by 20 through quality.”

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